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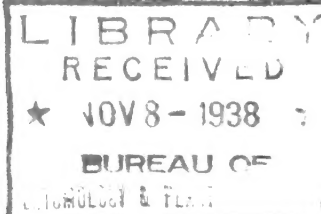
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## A SIMPLE HAND-OPERATED SOIL-SIFTING DEVICE

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A simple hand-operated sifting device (figs. 1 and 2) was built and has been operated satisfactorily for several seasons for sifting soil and orchard debris.<sup>2</sup>

The stands were built like the ordinary carpenter's "saw horses," about 28 inches high.

The upper edges of the track, except the middle third, were studded about every 3 inches with round-headed screws. Between these screws the wood was rasped away to form scallops to give a more pronounced bouncing movement to the carriage.

The end pieces of the track should stand about 1 inch higher than the sides to serve as bumpers to prevent the carriage from rolling off.

The carriage (fig. 1, top, and fig. 2, bottom) was constructed with rollers to roll over the screw heads and scallops on the track. These rollers were  $2\frac{1}{2}$  inches in diameter, with an iron rod running tightly through their entire length. Large wood screws inserted into the ends of the rollers broke repeatedly and were unsatisfactory. Several inches of the ends of the rollers should be covered with a fairly heavy galvanized iron or heavy tin to prevent rapid wearing of the rollers.

Round sticks, such as broom handles, were used for handles by which to operate the carriage. Any mesh of screening can be used for the sifting carriage, but for our purpose a rather heavy galvanized 6-mesh screen was satisfactory. A screen of smaller

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<sup>1</sup> Assisted by Richard C. Cumber, unskilled laborer, 1936 and 1937, at the Yakima, Wash., laboratory.

<sup>2</sup> A somewhat similar sifter was described by R. E. Campbell and M. W. Stone in Circular ET-49, "Soil Sifters for Subterranean Insects," but our employment of the irregular track seems to be an improvement in increasing the efficiency of the device.

mesh can be placed on the under side of the track frame to catch anything passing through the sifting screen. The carriage should be a couple of inches wider on each side than the track to prevent its running off. The rollers should be so placed that the bottom of the screen will not touch the screw heads in the track when the rollers are in the bottom of the scallops.

The screening on the bottom edges of the carriage frame should be covered with a 1-inch strip of tin to prevent wear on the edges of the screen if it comes in contact with the screw heads.

The device is operated by pulling the carriage rapidly back and forth over the track, and can be run by either one or two persons.

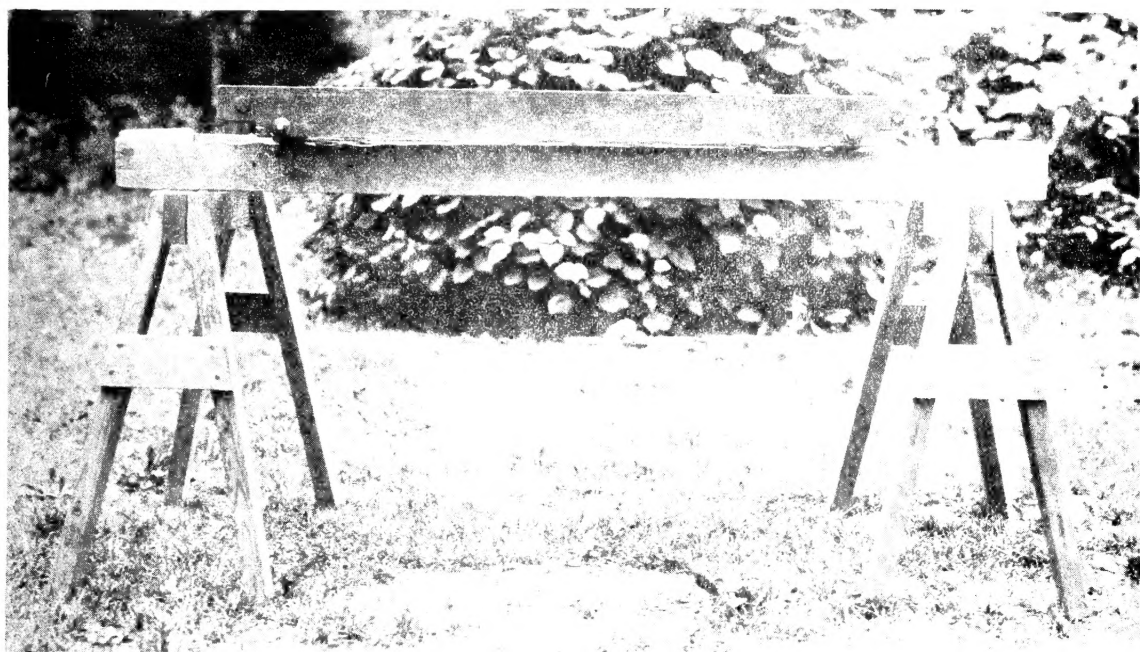


Figure 1.--Hand-operated soil-sifting device, showing sifting carriage riding on track, supported by stands.

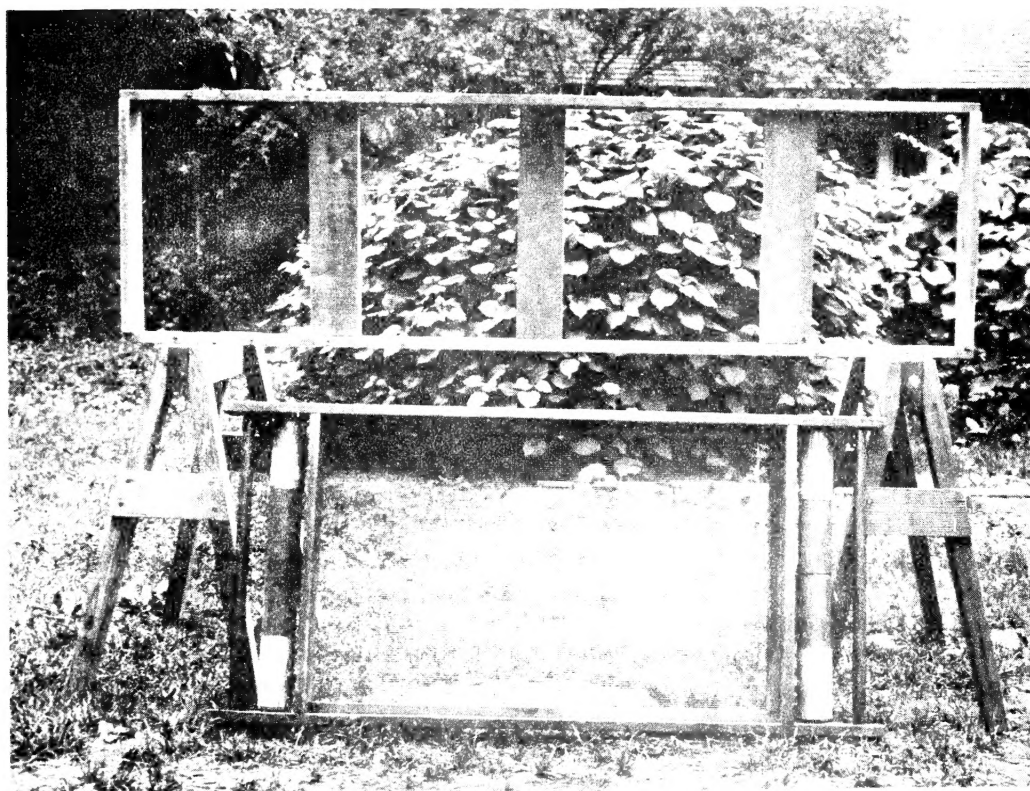


Figure 2.--Sifting device. At bottom, sifting carriage with screen on bottom, rollers, handles, etc. At top, track turned on side, showing edges studded with round-headed screws.

